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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/916,507	07/30/2001	Yasuaki Hidaka	2185-0560P	9754

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BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER

CHEN, VIVIAN

ART UNIT

PAPER NUMBER

1773

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/916,507	Applicant(s) HIDAKA ET AL.	
	Examiner Vivian Chen	Art Unit 1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2003 and 30 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/2001</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1773

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over FURUTA ET AL (US 6,306,501 B1) in view of HARVEY ET AL (US 5,589,236) for the reasons stated in the previous Office Action.

FURUTA ET AL '501 discloses laminate films suitable for packaging, wherein the films comprise at least one liquid crystal polyester-containing (LCP) layer and at least one thermoplastic layer, wherein the LCP-containing layer comprises 56-99.9 wt% of a liquid crystal polyester as a continuous phase and 0.1-44 wt% of a rubber containing functional groups such as epoxy or glycidyl groups which are reactive with the liquid crystal polyester as a disperse phase, said functional groups being present in the rubber in amounts of 0.1-30 wt% (line 50, col. 1 to line 50, col. 9; lines 23-31, col. 10; lines 35-54, col. 11) as recited in claims 1-3, 8-14, 16, 18. The LCP-containing layer has a typical thickness of 3-500 microns (lines 19-22, col. 10) as recited in claims 17, 19 and may be formed by inflation (lines 23-30, col. 11) as recited in claim 15. An optional adhesive layer comprising a polyurethane may be used between the LCP-containing layer(s) and the thermoplastic layer(s) (lines 19-22, col. 11) as recited in claims 5-7. However, the reference does not explicitly disclose laminates with ethylene vinyl alcohol (EVOH) layers.

HARVEY ET AL discloses that it is well known in the art to laminate ethylene-vinyl alcohol (EVOH) layers to a LCP film to form useful multilayer structures (lines 58-68, col. 1).

Art Unit: 1773

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a known polymer such as EVOH in the laminates of FURUTA ET AL '501 in order to obtain specific barrier or surface contact properties. One of ordinary skill in the art would have incorporated multiple LCP-containing layers and/or additional cover layers in the laminate and positioned said layers in order to obtain the surface characteristics or barrier and mechanical properties required for a specific usage as indicated in claims 3-4.

2. Claims 1-6, 8-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over SUMIDA ET AL (US 5,364,669) in view of FURUTA ET AL (US 5,997,765).

SUMIDA ET AL discloses laminate films suitable for packaging, wherein the films comprise at least one liquid crystal polyester-containing (LCP) layer and at least one thermoplastic layer such as an EVOH layer, wherein the LCP may be blended with other polymeric components (line 25, col. 4 to line 33, col. 13; line 67, col. 13 to line 2, col. 14) as recited in claims 1-3, 16, 18. The LCP-containing layer has a typical thickness of 1-500 microns (lines 62-66, col. 13) as recited in claims 17, 19 and may be formed by inflation (lines 1-20, col. 19) as recited in claim 15. An adhesive layer comprising a polyurethane or epoxy-modified polymer is used between the LCP-containing layer(s) and the thermoplastic layer(s) (lines 3-45, col. 14) as recited in claims 5-6. However, the reference does not explicitly disclose the recited LCP blend.

FURUTA ET AL '765 discloses that it is well known in the art to use LCP-based blends in laminates wherein the blends comprise 56-99.9 wt% of a liquid crystal polyester as a continuous phase and 0.1-44 wt% of a rubber containing functional groups such as epoxy or

Art Unit: 1773

glycidyl groups which are reactive with the liquid crystal polyester as a disperse phase, said functional groups being present in the rubber in amounts of 0.1-30 wt% (columns 6-15; lines 17-35, col. 17) as recited in claims 8-14 in order to obtain multilayer films with improved barrier and mechanical properties.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a known LCP blend as disclosed in FURUTA ET AL '765 as the LCP-containing layer(s) in the laminates of SUMIDA ET AL in order to obtain packaging materials with desirable barrier or forming properties. One of ordinary skill in the art would have incorporated multiple LCP-containing layers and/or additional cover layers in the laminate and positioned said layers in order to obtain the surface characteristics or barrier and mechanical properties required for a specific usage as indicated in claims 3-4.

Response to Arguments

3. Applicant's arguments filed 3/11/2003 have been fully considered but they are not persuasive.

(A) Applicant argues that FURATA '501 and FURATA '765 each fail to disclose a saponified ethylene-vinylester copolymer. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The FURUTA references are relied upon to illustrate that the recited LCP-based blends and film containing such blends are well known in the art.

Art Unit: 1773

(B) Applicant argues that HARVEY '236 and SUMIDA '669 each fail to disclose a saponified ethylene-vinylester copolymer. However, the references clearly disclose the use of ethylene-vinyl alcohol (EVOH) layers in LCP laminates and EVOH is a type of saponified ethylene-vinylester (see Applicant's own Specification, paragraph 0100).

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Art Unit: 1773


5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vivian Chen whose telephone number is (571) 272-1506. The examiner can normally be reached on Monday through Thursday from 8:30 AM to 6 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau, can be reached on (571) 272-1516. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

The General Information telephone number for Technology Center 1700 is (571) 272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 30, 2004


Vivian Chen
Primary Examiner
Art Unit 1773